



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Koh TAKEUCHI et al.

Group Art Unit: 1774

Application No. 09/942,029

Examiner: Bruce H. Hess

Filed: August 30, 2001

For: HEAT-SENSITIVE RECORDING MATERIAL AND HEAT-SENSITIVE RECORDING  
PROCESS

DECLARATION UNDER 37 C.F.R. § 1.132

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

I, Koh Takeuchi, do declare and state as follows:

I graduated from the graduate school of Hokkaido University,  
Faculty of Science, Department of Polymer Science with a Master's  
Degree in Engineering in March 1986;

I joined Fuji Photo Film Co., Ltd. in April 1986 and have been  
working there since;

I have been involved in the development of materials for  
thermal image recording including materials for medical usage from  
July 1986 to the present at Fuji's Fujinomiya laboratory;

I am a co-inventor of the subject matter disclosed and claimed

in the above-identified application; and

I am familiar with the Office Action of November 19, 2003 and understand that the Examiner has rejected Claims 10-15 under 35 U.S.C. § 103(a) as being unpatentable over either of the patents to Suzuki et al., U.S. Patent No. 5,866,507 and U.S. Patent No. 5,952,263.

The following additional comparative experiment was carried out under my supervision in order to make the advantages of the subject matter more clear.

Experiment: Evaluation of Wearing Resistance of Thermal Heads

Two thermal heads (trade name: KGT, 260-12MPH8, manufactured by Kyocera Corp.) were prepared as Example E and Comparative Example C, such that Example E was further equipped with a carbon layer having a thickness of 2  $\mu\text{m}$  and a carbon content of 98%, as an uppermost layer.

As heat-sensitive recording materials, Example 6 and Comparative Example 2 were prepared, subjected to recording using the thermal heads and evaluated in the same manner and conditions as for the Example 1 described in the specification of the present application except for the following changes in preparation of protective layer coating compositions:

- the amount of polyvinyl alcohol aqueous solution (8% by weight) was reduced to 45 g;
- 67.9 g of 18 % dispersion of melamine-formaldehyde copolymer particles (trade name: Epostar S, manufactured by Nippon Shokubai Co., Ltd., average particle diameter of 0.3  $\mu\text{m}$ ) and 2.1 g of 18 %

dispersion of guanaamine-formaldehyde copolymer particles (trade name: Epostar M30, manufactured by Nippon Shokubai Co., Ltd., average particle diameter of 3.0  $\mu$ m) were used instead of 18% pigment (100) dispersion;

-9.0 g of 40% silicone modified acrylic resin (trade name: X22-805, manufactured by Shin-Etsu Chemical Co., Ltd.) and 5.5 g of 20.5% dispersion of zinc stearate were further added; and

-the addition of 21.5% stearic amide compound was omitted in Comparative example 2.

Both Example 6 and Comparative Example 2 satisfy the condition (2) to (4) described in lines 32 to 37 on column 5 of Suzuki'507. Comparative Example 2 is outside the scope of the present invention because it lacks the use of stearic amide compound.

The results are shown in the following Table 1.

Table 1

	Example E		Comparative example C	
	Sticking	Noise (dB)	Sticking	Noise (dB)
Example 6	A	54	A	57
Comparative example 2	C	60	D	67

It is apparent from the above results that the example that satisfies the conditions of the present invention (Example 6 and Example E) exhibits superior head matching properties.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements

were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE: 1. Apr. 2004



Koh TAKEUCHI